PREFACE

A. THE LIST OF MILITARILY CRITICAL TECHNOLOGIES—OVERVIEW

The list of Department of Defense (DoD) militarily critical technologies is published in three parts:

- Part I, *Weapons Systems Technologies*, details critical technologies with performance parameters that are at or above the minimum level necessary to ensure continuing superior performance of U.S. military systems.
- Part II, *Weapons of Mass Destruction Technologies*, addresses critical technologies required for development, integration, or employment of biological, chemical, or nuclear weapons and their means of delivery. This document is not oriented toward U.S. capabilities; rather, it addresses technologies that proliferators might use to develop weapons of mass destruction (WMD). It provides technical information to assist various DoD entities in developing, supporting, and executing counterproliferation initiatives.
- Part III, *Developing Critical Technologies*, lists technologies that will produce increasingly superior performance of military systems or maintain a superior capability more affordably. It focuses on worldwide technologies that will become available in the future for incorporation into U.S. weapons systems.

B. THE DoD MCT PROCESS

The DoD MCT process is a continuous, analytical, and information-gathering process that refines information and updates existing documents to provide thorough and complete technical information. This process provides a systematic, ongoing assessment and analysis of technologies, assigns values and parameters to technologies, and covers the worldwide technology spectrum.

Technology Working Groups (TWGs), which are part of this process, provide a reservoir of technical experts who can assist in time-sensitive and quick-response tasks. TWG chairpersons continuously screen technologies and nominate items to be added or removed from the list of militarily critical technologies. TWGs are comprised of about 1,000 technical experts from government and the private sector.

In general, TWG members are drawn from military Services, DoD and other federal agencies, industry, and academia. A balance is maintained between public officials and private sector representatives. TWGs maintain a core of intellectual knowledge and reference information on an array of technologies. The data are used as a resource for many projects and other assignments, and TWG members are available to the national security community as technical experts. Working within an informal structure, TWG members strive to produce precise and objective analyses across dissimilar and often disparate areas. Currently, the TWGs are organized to address 20 technology areas:

Aeronautics
Armament and Energetic Materials
Biological
Biomedical
Chemical
Directed and Kinetic Energy Systems
Electronics
Energy Systems
Ground Systems
Information
Lasers, Optics, and Supporting Technology
Manufacturing and Fabrication
Marine Systems
Materials and Processing
Nuclear Systems
Positioning, Navigation, and Time
Sensors
Signature Control
Space Systems
Weapons Effects

C. USES AND APPLICATIONS

The action plan accompanying the 23 January 1995 Deputy Secretary of Defense Tasking Memorandum states that the list of militarily critical technologies is used as a:

- Technical foundation for U.S. proposals for export control in the Wassenaar Arrangement, Missile Technology Control Regime (MTCR), Nuclear Suppliers Group (NSG), Australia Group (AG), and other nonproliferation regimes
- Technical reference for licensing and export control by Customs officials, DoD, the Department of State (DoS), the Department of Commerce (DOC), and the Department of Energy (DOE)
- Technical reference for contracts and scientific papers prepared by government, industry, and academia
- Technical reference and guide for intelligence activities.

In addition, the list of militarily critical technologies:

- Provides background and support for international cooperative activities
- Supports the development of technology policy, technology release guidelines, and specific proposals or controls to be implemented by multinational organizations
- Provides coverage of the mission areas assigned to the Defense Threat Reduction Agency (DTRA).

D. LEGAL BASIS FOR MILITARILY CRITICAL TECHNOLOGIES DOCUMENTS

The Export Administration Act (EAA) of 1979 assigned responsibilities for export controls to protect technologies and weapons systems. It established the requirement for DoD to compile a list of militarily critical technologies. The EAA and its provisions, as amended, were extended by Executive Order 12924 (19 August 1994), which was extended on 15 August 1995, 14 August 1996, 13 August 1997, 13 August 1998, 10 August 1999, and 3 August 2000.

The legislation and execution directive are amplified and implemented by DoD Directive 2040.2 and by the Deputy Secretary of Defense letter dated 23 January 1995.